Atty. Dkt. No. 034827-3901

AMENDMENTS TO THE CLAIMS

Claims 1-27: Canceled.

28. (Currently Amended) A kit comprising:

an RNA template;

a DNA primer complementary to a region of the RNA template and of length sufficient to form a stable template-primer hybrid molecule with the RNA template; and

a ~~deoxynucleotide~~ deoxynucleoside triphosphate labeled with ~~a detectable moiety.~~ an acridinium moiety;

wherein neither the RNA template nor the DNA primer contains a detectable moiety.

29. (Original) The kit of claim 28 further comprising buffers for conducting a reverse transcriptase assay.

30. (Original) The kit of claim 29 wherein the buffers comprise a divalent metal ion at a concentration of about 5 mM.

Claim 31-39: Canceled.

40. (New) The kit of claim 28, wherein said kit further comprises one or more deoxynucleoside triphosphates not labeled with an acridinium moiety.

41. (New) The kit of claim 40, wherein the RNA template, DNA primer, deoxynucleoside triphosphate labeled with an acridinium moiety, or deoxynucleoside triphosphates not labeled with an acridinium moiety further comprise a capture moiety.

42. (New) The kit of claim 41, wherein the capture moiety is a hapten.

43. (New) The kit of claim 41, wherein said kit further comprises a solid phase capable of binding said capture moiety.

44. (New) The kit of claim 28, wherein said kit further comprises a dilute acid, hydrogen peroxide, or both.

45. (New) The kit of claim 28, wherein said RNA template comprises homopolymeric RNA, heteropolymeric RNA, or both.

46. (New) The kit of claim 28, wherein the deoxynucleoside triphosphate labeled with an acridinium moiety has the formula:

TP-Sugar-Px-L-Acr

wherein:

TP is a triphosphate group attached to the 5' position of the sugar;

sugar is a pentose sugar moiety;

Px is a purine, pyrimidine, or 7-deazapurine, and wherein Px is attached to the 1' position of the sugar moiety through the N1 position of Px when Px is a pyrimidine or through the N9 position of Px when Px is a purine or a 7-deazapurine;

L is a linker comprising linear or branched hydrocarbylene or heterocarbylene of at least one carbon atom, wherein L is covalently attached to Acr at one end of L, and at another end to Px through position C5 or C6 of Px when Px is a pyrimidine, or through position C8 of Px when Px is a purine, or through position C7 or C8 of Px when Px is a 7-deazapurine; and

Acr is an acridinium moiety.

47. (New) The kit of claim 46, wherein L is linear hydrocarbylene or heterocarbylene comprising at least one carbon atom.

48. (New) The kit of claim 46, wherein L is linear alkenylene or heteroalkenylene comprising at least 3 carbon atoms.

49. (New) The kit of claim 46, wherein L is selected from the group consisting of $-CH_2-CH=CH-CH_2-$, $-CH=CH-CH_2-NH-$, $-NH(CH_2)_6NH-$, $-C\equiv C-CH_2NH-$, and $-CH_2-C\equiv C-CH_2-$.

50. (New) The kit of claim 28, wherein the acridinium moiety is selected from the group consisting of 4-(2-sucinimidyl-oxycarbonylethyl)-phenyl-10-acridinium-9-carboxylate trifluoromethyl sulfonate, 1-methyl-acridinium ester, and 1-methyl-di-meta-fluoro-acridinium ester.

51. (New) The kit of claim 46, wherein Acr is selected from the group consisting of 4-(2-sucinimidyl-oxycarbonylethyl)-phenyl-10-acridinium-9-carboxylate trifluoromethyl sulfonate, 1-methyl-acridinium ester, and 1-methyl-di-meta-fluoro-acridinium ester.

52. (New) The kit of claim 38, wherein the said kit further comprises a solid phase suitable for immobilizing the RNA template or the DNA primer.

53. (New) A kit comprising:

an RNA template;

a DNA primer complementary to a region of the RNA template and of length sufficient to form a stable template-primer hybrid molecule with the RNA template; and

a deoxynucleoside triphosphate labeled with an acridinium moiety;

wherein neither the RNA template nor the DNA primer contains a luminescent moiety.

54. (New) The kit of claim 53, further comprising buffers for conducting a reverse transcriptase assay.

55. (New) The kit of claim 54, wherein the buffers comprise a divalent metal ion at a concentration of about 5 mM.

56. (New) The kit of claim 53, wherein said kit further comprises one or more deoxynucleoside triphosphates not labeled with an acridinium moiety.

57. (New) The kit of claim 56, wherein the RNA template, DNA primer, deoxynucleoside triphosphate labeled with an acridinium moiety, or deoxynucleoside triphosphates not labeled with an acridinium moiety further comprise a capture moiety.

58. (New) The kit of claim 57, wherein the capture moiety is a hapten.

59. (New) The kit of claim 57, wherein said kit further comprises a solid phase capable of binding said capture moiety.

60. (New) The kit of claim 53, wherein said kit further comprises a dilute acid, hydrogen peroxide, or both.

61. (New) The kit of claim 53, wherein said RNA template comprises homopolymeric RNA, heteropolymeric RNA, or both.

62. (New) The kit of claim 53, wherein the deoxynucleoside triphosphate labeled with an acridinium moiety has the formula:

TP-Sugar-Px-L-Acr

wherein:

TP is a triphosphate group attached to the 5' position of the sugar;

sugar is a pentose sugar moiety;

Px is a purine, pyrimidine, or 7-deazapurine, and wherein Px is attached to the 1' position of the sugar moiety through the N1 position of Px when Px is a pyrimidine or through the N9 position of Px when Px is a purine or a 7-deazapurine;

L is a linker comprising linear or branched hydrocarbylene or heterocarbylene of at least one carbon atom, wherein L is covalently attached to Acr at one end of L, and at another end to Px through position C5 or C6 of Px when Px is a pyrimidine, or through position C8 of Px when Px is a purine, or through position C7 or C8 of Px when Px is a 7-deazapurine; and

Acr is an acridinium moiety.

63. (New) The kit of claim 62, wherein L is linear hydrocarbylene or heterocarbylene comprising at least one carbon atom.

64. (New) The kit of claim 62, wherein L is linear alkenylene or heteroalkenylene comprising at least 3 carbon atoms.

65. (New) The kit of claim 62, wherein L is selected from the group consisting of $-CH_2-CH=CH-CH_2-$, $-CH=CH-CH_2-NH-$, $NH(CH_2)_6NH-$, $-C\equiv C-CH_2NH-$, and $-CH_2-C\equiv C-CH_2$.

66. (New) The kit of claim 53, wherein the acridinium moiety is selected from the group consisting of 4-(2-sucinimidyl-oxycarbonylethyl)-phenyl-10-acridinium-9-carboxylate trifluoromethyl sulfonate, 1-methyl-acridinium ester, and 1-methyl-di-meta-fluoro-acridinium ester.

67. (New) The kit of claim 62, wherein Acr is selected from the group consisting of 4-(2-sucinimidyl-oxycarbonylethyl)-phenyl-10-acridinium-9-carboxylate trifluoromethyl sulfonate, 1-methyl-acridinium ester, and 1-methyl-di-meta-fluoro-acridinium ester.

68. (New) The kit of claim 53, wherein the said kit further comprises a solid phase suitable for immobilizing the RNA template or the DNA primer.